July 23, 1998

Mr. Oliver D. Kingsley
President, Nuclear Generation Group
Commonwealth Edison Company
ATTN: Regulatory Services
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: LASALLE INSPECTION REPORT 50-373/98011(DRP); 50-374/98011(DRP)

Dear Mr. Kingsley:

On July 16, 1998, the NRC completed an inspection at your LaSalle facility. The inspection focused primarily on routine operations at LaSalle and the status of the LaSalle Restart Action Plan. The enclosed report presents the results of that inspection.

During this 6-week inspection period, performance at LaSalle was acceptable. Your staff continued to take additional actions to address personnel performance issues with some apparent short-term success. However, several minor errors by operations and maintenance personnel during the inspection period indicated that continued management attention is necessary to ensure personnel performance improvement is self-sustaining over the long-term.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

Sincerely,

Original signed by

Geoffrey E. Grant, Director
Division of Reactor Projects

Docket Nos.: 50-373; 50-374
License Nos.: NPF-11; NPF-18

Enclosure: Inspection Report 50-373/98011(DRP);
50-374/98011(DRP)

See Attached Distribution

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REGION III

Docket Nos:	50-373, 50-374
License Nos:	NPF-11, NPF-18
Report No:	50-373/98011(DRP); 50-374/98011(DRP)
Licensee:	Commonwealth Edison Company
Facility:	LaSalle County Station, Units 1 and 2
Location:	2601 N. 21st Road Marseilles, IL 61341
Dates:	June 5 - July 16, 1998
Inspectors:	M. Huber, Senior Resident Inspector J. Hansen, Resident Inspector R. Crane, Resident Inspector
Approved by:	Roger D. Lanksbury, Acting Chief Reactor Projects Branch 2

EXECUTIVE SUMMARY

LaSalle County Station, Units 1 and 2
NRC Inspection Report 50-373/98011(DRP); 50-374/98011(DRP)

This inspection report included aspects of licensee operations, maintenance, engineering and plant support. The report covers a 6-week period of inspection conducted by the resident staff.

Plant Operations

- Operations performance was acceptable. Control room personnel communicated effectively and followed procedures in most instances. Licensed operators ensured correct contingency actions were discussed during a heightened-level-of-awareness briefing prior to an emergency core cooling system response time test. A non-licensed operator took appropriate actions after discovering a strainer actuator was removed from an out-of-service (OOS) released by maintenance personnel. (Section O1.1)

- Operators made minor errors during the inspection period. Although the errors did not result in any safety consequences, they did present challenges to plant configuration control. For example, a licensed control room operator operated an incorrect switch prior to maintenance on a ventilation fan, and operations personnel established an OOS on the incorrect unit for stator cooling system maintenance. (Section O1.1)

- The licensee's Integrated Operations Performance Reviews (IOPR) conducted during the Division I and II response time tests were, with few exceptions, critical of plant personnel performance and provided an adequate assessment of the integrated plant performance during those plant evolutions. (Section O4.1)

- The inspectors identified a few performance deficiencies during the IOPR which were not observed by the licensee. However, the problems did not detract from the overall critical review of the plant performance during the Division I and II response time tests. (Section O4.1)

- The licensee's actions to address management expectations were implemented in accordance with the LaSalle Restart Action Plan with the goal of a step change in human performance. The licensee met this goal and continued to implement actions to communicate expectations to the plant staff and ensure the workers' understanding of the expectations. Plant personnel were cognizant of management's expectations. (Section O8.1)

- The licensee had programs for monitoring plant performance and took action to address adverse performance trends. Workers were conscientious of management expectations for safety and identified potentially adverse conditions. In addition, plant personnel reported issues using the corrective action program to identify their concerns, as specified by the licensee's corrective action program. (Section O8.2)

- The licensee effectively implemented the step in the LaSalle Restart Action Plan to regularly communicate the status of the restart plan and system readiness reviews. Plant issues and corrective actions for the issues were effectively communicated by station management and were understood by station personnel. (Section O8.3)

- Station management coordinated the resolution of significant issues in an acceptable manner. Justifications for the deferral of specified operator work-arounds, temporary alterations, and control room distraction work requests beyond restart were reviewed by the inspectors and were adequate, and decisions made by management during meetings regarding the resolution of plant issues were conservative. (Section O8.4)

- The licensee effectively implemented LaSalle Restart Action Plan activities in support of pre-startup testing. The licensee was developing a Power Ascension Plan which would address the restart and power ascension process and initiated the IOPR process to evaluate readiness for restart, both of which appeared appropriate. Testing and procedure revisions required for restart had been identified by the licensee and were either completed or scheduled in the Unit 1 integrated restart schedule. (Section O8.5)

Maintenance

- The conduct of maintenance was acceptable and had improved in the areas of rework and the work scheduling process. (Section M1.1)

- The licensee identified that a supervisor released an OOS on a non-safety related service water strainer for which work had not yet been completed. (Section M1.1)

Engineering

- The licensee performed an operability evaluation of the emergency core cooling system pumps to address a 10 CFR Part 21 report issued by Ingersoll-Dresser Pump Company. The evaluation was timely and was well written. The documentation clearly supported the operability conclusions reached in the evaluation. (Section E2.1)

Report Details

Summary of Plant Status

During this inspection period, the licensee maintained Unit 1 in cold shutdown (Operational Condition 4) for a forced outage, and Unit 2 remained shut down for a refueling outage with all fuel removed from the reactor.

I. Operations

O1 Conduct of Operations

O1.1 General Comments

a. Inspection Scope (71707)

The inspectors monitored control room activities such as routine turnovers and surveillance activities, attended control room briefings, reviewed shift logs and daily orders, and interviewed operators regarding plant and equipment status.

b. Observations and Findings

The inspectors observed that control room personnel were knowledgeable of plant and equipment status, effectively communicated operational information, and operated equipment in accordance with approved plant procedures. Two noteworthy instances of operators demonstrating a questioning attitude were observed.

In one instance, during a heightened-level-of-awareness (HLA) meeting conducted prior to the Division I emergency core cooling system (ECCS) response time testing (RTT), licensed operators intervened in response to information provided by the test director. The operators displayed an in-depth level of knowledge regarding emergency diesel generator (EDG) auxiliary systems and ensured that a conservative contingency plan was discussed and would be implemented if the EDG cooling water pump failed to start or the EDG output breaker failed to close during testing.

In another instance, a non-licensed operator, while removing an out-of-service (OOS), noticed that the actuator for a non-essential service water strainer was not in place and was, in fact, still disassembled although the actuator had been released by maintenance. The operator discontinued the removal of the OOS and informed his supervisor. The inspectors considered the operator's actions appropriate.

Two minor instances of operations personnel failing to maintain configuration control occurred. In one instance, licensed operators prepared, independently verified, and authorized an OOS for work on a Unit 1 main generator stator cooling system leaking check valve. However, the operator who prepared the OOS mistakenly listed Unit 2 components on the OOS checklist. Since the Unit 2 stator cooling system had been previously placed under an OOS, the prepared OOS checklist did not require any plant manipulations or tags to be placed on equipment. The licensed individual who performed

the independent verification of the prepared OOS failed to identify that the OOS was for a Unit 1 valve but the components listed on the OOS checklist were Unit 2 components. The OOS was then brought to the work control center (WCC) supervisor, a licensed Senior Reactor Operator (SRO), who approved the OOS. Maintenance personnel conducted a pre-work walkdown of the repairs to be conducted on the valve and questioned the WCC SRO about the adequacy of the OOS. The WCC SRO then recognized the error with the OOS and stopped all OOS work in the WCC and informed the shift manager who initiated a prompt investigation. The safety-significance of the incorrect OOS was minimal because the system was depressurized and the maintenance personnel had not commenced work prior to identifying the error. However, inspectors were concerned about the performance of operations personnel associated with independently verifying and reviewing OOS activities.

In the second instance, a licensed control room operator erroneously manipulated the 1A reactor building supply fan control switch. The operator had been directed to place the 1A reactor building exhaust fan switch in the pull-to-lock position but manipulated the supply fan switch instead. Personnel in the plant recognized the error and informed control room personnel prior to commencing work. Since no equipment was started or stopped and the error was identified prior to starting work, the safety-significance was minimal, however, this demonstrated a lack of plant configuration control by a licensed control room operator.

c. Conclusions

Operations performance was acceptable overall. Control room personnel communicated effectively and followed procedures. Two instances were identified by the inspectors where operators demonstrated a good questioning attitude. Operators made minor errors during the inspection period. Although the errors did not result in any safety consequences, they did represent challenges to plant configuration control. Examples included an operator performing an incorrect switch manipulation prior to maintenance on a ventilation fan, and operations personnel establishing an OOS on the incorrect unit for the generator stator cooling system maintenance.

O4 Operator Knowledge and Performance

O4.1 Integrated Operations Performance Review (IOPR)

a. Inspection Scope (71707)

The inspectors observed the licensee's self evaluation of the Division I and Division II ECCS RTTs by plant management as part of the licensee's IOPR process. In addition, the inspectors reviewed the written IOPR performance summaries and reviews of the IOPR conducted by the Nuclear Oversight organization.

b. Observations and Findings

The inspectors noted that in almost every instance the line managers assigned as evaluators in the licensee's IOPR were critical of plant personnel performance. The written documentation provided to senior plant management by the IOPR project manager following each test provided an adequate assessment of the effectiveness of the corrective

actions related to the licensee's restart plan. Specifically, they addressed the previously identified declining trends in the area of human performance. The overall NRC assessment of the completed IOPR will be addressed by the NRC Restart Readiness Assessment Team with the results documented in NRC Inspection Report 50-373/98015; 50-374/98015.

The inspectors identified several concerns with the IOPR process which were provided to plant management and are discussed below. During the HLA meetings conducted prior to commencing the ECCS RTTs, one IOPR evaluator, who was also a line manager in the health physics department, provided input to the meeting concerning his particular areas of responsibility although health physics supervision and a health physics technician were present. However, at the IOPR evaluator debrief following the tests and observations, no mention of his intervention was discussed and the need to address problems identified during the HLA were not addressed in the IOPR performance summary report. The fact that an evaluator needed to provide comments during the HLA indicated a weakness in the meeting and should have been addressed in the performance summary. The inspectors were concerned that with evaluator involvement in the HLA process in this instance, evaluators were not completely objective (i.e., all problems were not documented in the performance summaries).

The inspectors identified an instance where an evaluator made good use of the observer checklists, however, the observer appeared to limit his observations to only items on the checklist. The evaluator who was present when the NRC identified that an incorrect recorder chart speed setting was selected during setup for the Division II RTT, did not document this discrepancy in his evaluator comments or mention the error at the IOPR debrief. The licensee later determined that the setting of the chart speed was performed prior to the recorder calibration, which allows for changing the chart speed. No one subsequently checked the chart speed until the inspectors questioned the instrument maintenance technicians following the completion of the installation procedure.

During the Division I RTT HLA meeting, the test director and his supervisor twice recommended actions other than the most conservative when questions were posed about the test. Operators in attendance at the HLA disagreed with the recommendations of the test director and the conservative decision was made by the shift manager. The personnel attending the meeting asked questions, including actions to be taken if the EDG cooling water pump failed to restart upon re-energization of Division I buses from the EDG and what to do if the EDG output breaker failed to close during the test. The test director and a system engineering supervisor stated that for each case the EDG should not be tripped prior to transfer of loads back to the Station Auxiliary Transformer (SAT). Operations personnel decided to trip the EDG prior to the transfer of loads, then re-energize the Division I bus from the SAT and restart the loads.

c. Conclusions

The IOPR performed for the Division I and II RTTs were critical of plant personnel performance and provided an adequate assessment of the integrated plant performance during those plant evolutions. The identified deficiencies indicated some problems with implementation of the licensee's IOPR program, however, the problems did not detract from the overall critical review of the plant performance during the Division I and II RTTs.

O8 Miscellaneous Operations Issues (71707, 92700, 92901)

O8.1 (Closed) NRC Restart Action Plan 0350, Item C.2.2.a. - Goals and Expectations Communicated to and Understood by the Staff and C.3.1.c. - Understanding of Management's Expectations and Goals

a. Inspection Scope (71707)

The inspectors reviewed NRC Restart Action Plan 0350, Items C.2.2.a. and C.3.1.c. regarding LaSalle management actions taken to communicate performance expectations to the plant staff and the plant staff's understanding of the goals and expectations. In addition, inspectors discussed the goals and expectations with plant personnel.

b. Observations and Findings

In NRC Inspection Report 50-373/98004; 50-374/98004, the inspectors discussed the implementation status of the licensee's actions to address human performance deficiencies. In that inspection report, the inspectors identified that although human performance had improved overall in response to the licensee's implementation of Action Plan 2.1, Step 1, some human performance errors continued to occur. The licensee's LaSalle Readiness Measures for human performance, including a goal of an improving trend in the Station Event Free Clock (fewer clock resets), had not been met.

To address the continuing human performance deficiencies that were occurring at the station, the licensee implemented additional human performance improvement initiatives. Examples included "Pocket Book" training and various "Scorecard" programs.

More recently, inspectors determined through observations and interviews, that plant personnel knew the expectations of plant management and the goals that had been established for human performance and each individual's contribution to the station's goals. On several occasions, the inspectors observed managers and supervisors providing immediate feedback to plant personnel on performance issues. Portions of the Restart Plan addressed improving communications with workers in addition to other programs which were implemented by the departments to increase awareness of human performance. The licensee's actions continued to emphasize and reinforce the performance expectations for safe plant operations. Departmental programs included:

- Operations crew event free clocks
- Operations human performance error rate training sessions
- Maintenance Leadership Standards
- Rework Board

While some personnel errors continued to occur at the station, the overall error rate and the significance of the errors decreased during the current inspection period. In addition, the scorecard error rate decreased from approximately five to two human performance errors for conditions adverse to quality for each 10,000 hours worked. By the end of the inspection period, the licensee was meeting its LaSalle Readiness Measures for human performance.

c. Conclusions

The licensee's actions to address management expectations were effectively implemented in accordance with the LaSalle Restart Action Plan with the goal of a step change in human performance. The licensee met this goal and continued to implement actions to communicate expectations to the plant staff and ensure the worker's understanding of the expectations. Although some performance problems continued to occur, plant personnel were, with few exceptions, cognizant of management's expectations.

O8.2 (Closed) NRC Restart Action Plan 0350, Item C.3.1.b. - Demonstrated Safety Consciousness

a. Inspection Scope (71707)

The inspectors observed plant personnel performing work activities and discussed worker's perspectives on plant safety throughout the inspection period to assess the safety consciousness at LaSalle Station. In addition, the inspectors reviewed the licensee's documentation package for NRC Checklist, Item C.3.1.b., Demonstrated Safety Consciousness.

b. Observations and Findings

Overall, plant personnel performed activities in a manner that reflected an awareness of safety. Workers followed established procedures during the vast majority of activities and responded positively to criticism of performance deficiencies. Although some personnel errors continued to occur at LaSalle, no actual safety consequences resulted. In meetings conducted at the plant, personnel raised issues and concerns. For example, the inspectors observed pre-job briefings held prior to testing activities and on several occasions, personnel involved with the tests discussed questions or concerns they had about the testing. In addition, as stated in Section O8.1 above, the lower error rates and fewer Station Event Free Clock resets demonstrated some improving trends over the past year.

The licensee indicated that a safety conscious work environment was one in which employees felt free to raise concerns and could be measured by management's ability to evaluate, prioritize, and resolve concerns. In addition, effective employee concerns and corrective action processes, and management actions to recognize employees who raise concerns would also be measures of a safety conscious work environment. The licensee monitored the corrective action program, Employee Concerns program, and external reporting methods (e.g., NRC and the Department of Labor) to ensure that the plant staff continued to raise concerns. One indicator of the plant staff's willingness to identify issues was the number of problems identified by plant personnel. The number increased from 5628 in 1996 to 7900 in 1997. For January through June 1998, 5108 problem identification forms (PIF) had been written by plant personnel.

Several of the action plans in the licensee's Restart Plan had a positive impact on those programs and processes described above. For example, the licensee implemented Restart Action Plan Strategy 5 to improve the correction action program at LaSalle. The licensee also took action to improve their Employee Concerns Program. As previously stated in

Section O8.1, portions of the licensee's Restart Plan and other programs were implemented by the departments to increase awareness of human performance. Departmental programs included:

- Operations crew event free clocks
- Operations human performance error rate training sessions
- Maintenance Leadership Standards
- Rework Board

c. Conclusions

The licensee had programs for monitoring plant performance and took action to address adverse performance trends. Workers identified potentially adverse conditions and were conscientious while performing activities to ensure safety. In addition, plant personnel reported issues using the corrective action program to identify their concerns, as specified by the licensee's corrective action program.

O8.3 (Closed) NRC Restart Action Plan 0350, Item C.3.1.d. - Understanding of Plant Issues and Corrective Actions

a. Inspection Scope (71707)

The inspectors reviewed NRC Restart Action Plan 0350, Item C.3.1.d., regarding the plant staff's understanding of plant issues and corrective actions. The inspectors observed various meetings such as an all-hands meeting, operations department communications meetings, plan-of-the-day meetings, and outage issue resolution meetings. In addition, the inspectors conducted interviews with station personnel. The inspectors also reviewed the licensee's implementation of Restart Action Plan 2.1, Step 5.4, regularly communicate status of the restart plan and system functional reviews.

b. Observations and Findings

The licensee established Action Plan 2.1 to provide clear expectations to site workers, communicate site direction, and to address barriers to human performance improvement. Step 5.4 was implemented to regularly communicate the status of the restart plan and system functional reviews and thus improve organizational communications. The inspectors verified that the licensee implemented Step 5.4. The licensee utilized various communication tools including the daily plant newspaper, the plan-of-the-day meeting, all-hands meetings, and departmental communication meetings to inform station personnel of plant issues and corrective actions and the status of the restart plan and system functional reviews. In addition, the current status of the restart effort including schedule adherence, activities recently completed, and activities scheduled for the next 72 hours, were displayed on a white board in the administration building lobby to provide current information to plant personnel. During daily routine interactions with licensee personnel, the inspectors found that personnel were cognizant of the status of the restart plan and demonstrated an understanding of plant issues and corrective actions to address them.

c. Conclusions

The licensee regularly communicated the status of the restart plan and system readiness reviews effectively. Plant issues and corrective actions for the issues were effectively communicated by station management and were understood by station personnel.

O8.4 (Closed) NRC Restart Action Plan 0350, Item C.2.2.g. - Management's Ability to Coordinate Resolution of Significant Issues

a. Inspection Scope (71707)

The inspectors reviewed NRC Restart Action Plan 0350, Item C.2.2.g., regarding station management's ability to coordinate resolution of significant issues by reviewing the licensee's plans to disposition operator work arounds (OWAs), temporary alterations (TALTs), and control room distractions. The inspectors also verified the implementation of the following items of the licensee's Restart Action Plan.

- Action Plan 1.2A, Step 15 - Provide written justification for the OWAs that have been deferred to L1R08 or beyond and define the safety impact and the impact on the operators in the plant.

- Action Plan 1.2B, Step 11 - Provide written justification for temporary alterations that have been deferred from L1F35 and define the safety impact and the impact on the operators in the plant and [main control room] MCR.

- Action Plan 1.2C, Step 5 - Provide written justification for the main control room (MCR) distractions that have been deferred to L1R08 and define the safety impact and the impact on the operators in the MCR.

In addition, the inspectors reviewed station management's coordination and resolution of plant issues.

b. Observations and Findings

In NRC Inspection Report 50-373/98010; 50-374/98010, the inspectors discussed the licensee's implementation of LaSalle Restart Action Plan 1.2A, Step 12, and Action Plan 1.2B, Step 10, with regard to the licensee's plans for resolution of each outstanding OWA and TALT. As stated in that report, the licensee had not completed the action plan steps which required a written justification of OWAs, TALTs, and main control room distractions and which had been deferred beyond restart. Implementation of those steps is discussed below.

The licensee implemented Action Plan 1.2A to improve overall safe plant operations by reducing operator work-arounds and preventing unnecessarily challenges to plant operators. The licensee implemented Action Plan 1.2A, Step 15, which required written justification for OWAs deferred beyond restart. System engineers reviewed individual OWAs as part of the System Readiness Reviews and determined that six of the outstanding OWAs would be deferred beyond Unit 1 restart. In addition, an aggregate review of the operational impact of the combined effect of the six deferred OWAs was completed by the licensee with no problems identified. The inspectors reviewed the

justifications for the deferred OWAs and found them adequate. At the end of the inspection period there were no additional outstanding OWAs, beyond the six deferred, associated with Unit 1.

The licensee implemented Action Plan 1.2B to reduce the number of temporary challenges or TALTs that were placed on plant systems which could challenge plant operators during normal, abnormal, and emergency conditions. The licensee implemented Action Plan 1.2B, Step 11, which required a written justification for each TALT which would remain in place following Unit 1 restart. The inspectors reviewed the list of TALTs which would remain following the Unit 1 restart and verified that an adequate 10 CFR 50.59 safety evaluation or screening existed for each listed TALT. At the end of the inspection period, TALTs that would not remain in place following restart were scheduled to be removed.

The licensee implemented Action Plan 1.2C to address operator distractions in the main control room. The licensee implemented Action Plan 1.2C, Step 5, which required a written justification for main control room distraction work requests which would not be completed prior to restart. The deferred work requests were minor and the justifications for deferring the work were reviewed by the inspectors and were adequate.

Licensee management coordinated the resolution of emergent issues during various management meetings, including the Event Screening Committee (ESC) meeting and the daily outage meeting, by prioritizing activities, specifying the level of significance, assigning responsibilities, and reviewing operability and reportability determinations. In general, the decisions made by plant management appeared to be conservative and the inspectors noted no deficiencies.

c. Conclusions

Station management coordinated the resolution of significant issues in an acceptable manner. Justifications for the deferral of specified OWAs, TALTs, and control room distraction work requests beyond restart were reviewed by the inspectors and were adequate. Also, plant management decisions regarding the resolution of plant issues were conservative.

O8.5 (Closed) NRC Restart Action Plan 0350, Item C.4.c. - Results of Pre-Startup Testing

a. Inspection Scope (71707)

The inspectors observed pre-startup testing activities, which included the Division I and Division II ECCS RTT, and evaluated the licensee's IOPR process. In addition, the inspectors verified implementation of the following portions of the licensee's restart plan.

- Action Plan 1.1C, Step 4 - Fast Cruise System Checkout
- Action Plan 4.2, Step 1.9 - Identify Required Functional Testing
- Action Plan 4.2, Step 1.10 - Implement Testing Preparation, Implementation, and Results Review Process

- Action Plan 4.2, Step 1.11 - Review Startup Related Procedures for Adequacy

b. Observations and Findings

The licensee established Action Plan 1.1C to provide effective management oversight of restart activities and to develop and implement a Restart and a Power Ascension Plan. The licensee implemented Action Plan 1.1C, Step 4, Fast Cruise System Checkout, to evaluate the station's ability to safely perform planned and emergent activities. To accomplish the objective, the licensee identified activities that could be observed which would demonstrate that material condition, personnel performance, and the work control process would support Unit 1 restart. The testing included the activities used during the licensee's self evaluation, subsequently renamed from Fast Cruise to IOPR, and primarily consisted of surveillance, post-maintenance, post-modification, and system performance testing such as ECCS RTTs. Since the plant shut-down in 1996, the scope of testing required to be performed prior to restart had been identified during the System Functional Performance Reviews and also resulted from emergent work. The licensee had been performing tests throughout the outage. Remaining testing activities were scheduled for completion prior to restart. Furthermore, the licensee was developing a Power Ascension Plan which defined the activities to be performed for restart and power ascension and consisting of the following major elements.

- Power Ascension Special Procedure
- Power Ascension Schedule
- Power Ascension Organization and Staffing
- Test Control Plan
- Power Ascension Testing
- Routine Surveillance Testing
- Routine Corrective and Preventive Maintenance Performance

The licensee also reviewed the procedures that would be used for various testing activities required for restart.

The licensee established Action Plan 4.2 to conduct assessments necessary to ensure that configuration discrepancies, design evaluations, and material condition issues were identified and appropriately prioritized for resolution to attain plant operational readiness. The licensee implemented Action Plan 4.2, Step 1.9, which required reviews to identify functional testing requirements such as integrated ECCS tests. From the reviews, the licensee generated a list of required functional and integrated testing that was included in the IOPR.

The licensee implemented Action Plan 4.2, Step 1.10, to improve the process for revising, implementing, and reviewing plant procedures. The licensee originally formed a Joint Test Group to improve the process, but later determined that existing procedures were adequate to accomplish the objectives of the Joint Test Group and disbanded the group. The inspectors reviewed test procedures, reviewed testing, and evaluated test results and did not identify any problems with the process. However, problems noted by the inspectors during the performance of testing activities are discussed in Section M1.2.

Action Plan 4.2, Step 1.11, was implemented by the licensee to review startup related procedures and the licensee used various means to accomplish the reviews. One method

utilized by the licensee was procedure walkdowns. Operations department personnel conducted the procedure walkdowns to verify that operating procedures could be performed as written. Other departments reviewed procedures as part of departmental restart readiness assessments and other procedural deficiencies were identified during the SFPR process. Procedure changes which were required for restart had been identified and were being completed in accordance with the Unit 1 restart integrated schedule. The licensee's implementation of Action Plan 4.2, Steps 1.9, 1.10, and 1.11 was adequate.

In NRC Inspection Report 50-373/98005(DRS); 50-374/98005(DRS), the inspectors discussed implementation of other aspects of Action Plan 4.2, Step 1, and concluded that the licensee effectively implemented applicable portions of the restart plan.

c. Conclusions

The licensee effectively implemented LaSalle Restart Action Plans in support of pre-startup testing. The licensee was developing a Power Ascension Plan which would address the restart and power ascension process and initiated the IOPR process to evaluate readiness for restart, both of which appeared appropriate. The licensee had identified testing and procedure revisions required for restart which were either completed or scheduled in the Unit 1 integrated restart schedule.

O8.6 (Closed) Violation (VIO) 50-373/374-97007-02: Inadequate emergency diesel generator post-maintenance test guidance following air start motor replacement.

On June 26, 1997, the inspectors identified that a work request for replacement of EDG air start motors did not provide instructions of a type appropriate to the circumstances in that it provided inappropriate post-maintenance test guidance. Specifically, the work request did not require a timed start of the EDG following air start motor replacement although such replacement could affect the start time specified in Technical Specifications (TS).

The licensee determined the cause for the inadequate post-maintenance testing of the replacement air start motors for the EDG was an inadequate technical review. The licensee had previously determined, using engineering judgment, that performing like-for-like replacement of the air start motors adequately demonstrated the functionality of the EDG and a timed start was not required. This engineering judgment was promulgated through the licensee's TS Clarification No. 02-90. This clarification was the basis for the work instructions in the subject work request. The licensee determined that the technical basis for this engineering judgment had not been adequately documented.

The licensee implemented corrective actions which included completing timed starts of the affected EDGs, canceling TS Clarification No. 02-90, and revising the applicable EDG procedures and work documents to ensure EDG post-maintenance testing included a timed start following air start motor replacement. The inspectors determined that these corrective actions had been completed. This violation is closed.

O8.7 (Closed) VIO 50-373/374-97020-01: Two examples of failure to follow plant procedures including the failure to maintain Operability Evaluations in the Control Room and the failure to incorporate required information in a maintenance work document.

Licensed operators did not have operability evaluations available in the control room as

required by LAP-220-5, “Equipment Operability Determination,” Revision 5. The licensee implemented corrective actions which included revising administrative procedures and initiating an operations department Daily Order. The inspectors verified that LAP-220-5 had been revised to provide more specific guidance clarifying management expectations for maintaining operability evaluations in the control room. Also, operations department management issued a Daily Order discussing the intent of LAP-220-5. In addition, the licensee had implemented procedural changes for maintaining operability evaluations.

A maintenance work analyst had not incorporated information required by Maintenance Memo 200-02 into a work document. The licensee implemented corrective actions which included updating the applicable maintenance memo. The inspectors reviewed Maintenance Memo 200-02. The memo had been revised to ensure that work request packages generated from previously completed work requests would be reviewed to verify that information referenced on the design drawings was current and that the work analyst would verify the work request to a controlled document. In addition, the inspectors interviewed work analysts and determined that they understood the requirements for referencing controlled documents. This violation is closed.

O8.8 (Closed) VIO 50-373/374-97020-02: Corrective actions for loose emergency diesel generator test valve assemblies were not adequate to prevent repetition.

The licensee's root cause evaluation and corrective actions for loose emergency diesel generator test valve assemblies, which were discussed in Nuclear Operations Notice (NON) DR-12-96-18, and corrective actions for other loose valves identified by equipment operators in December 1996, were not able to preclude repetition which resulted in the failure of a test valve assembly.

The licensee implemented Nuclear Station Work Procedure (NSWP)-A-06, “Operating Experience,” in February 1997. This procedure required operating experience information, such as NONs, be reviewed by a subject matter expert and action taken as appropriate. Also, the licensee provided information to engineering department personnel regarding the importance of timely and thorough evaluations of operating experience information. The inspectors reviewed NSWP-A-06, interviewed engineering personnel, and reviewed operating experience information and determined that the licensee had improved the overall use and application of operating experience information and lessons learned. This violation is closed.

O8.9 (Closed) Licensee Event Report (LER) 50-373/97-035-00: Channel Calibration of the Average Power Range Monitor (APRM) Not Performed According to TS Requirements Due to Misinterpretation of a Table Notation.

The licensee identified that the requirements in TS Table 4.3.1.1-1, Note (e), had been misinterpreted since initial plant operation. Specifically, the table required a channel calibration for the APRM flow-biased simulated thermal power-upscale circuit prior to Operational Condition 1; however, the licensee had been performing the calibration in Operational Condition 1 prior to 25 percent power.

The licensee had completed corrective actions which included placing an entry in the degraded equipment log for the APRM channels to require completion of the weekly calibration prior to entry into Operational Condition 1, and revising the normal unit startup

procedure to include performing the APRM weekly channel calibration surveillance test prior to placing the reactor mode switch in run. In addition, the licensee performed a review of the table notations associated with TS Table 4.3.1.1-1 to ensure appropriate application.

The licensee's failure to perform the channel calibrations for the APRM flow-biased simulated thermal power-upscale circuit prior to Operational Condition 1 as required by TS Table 4.3.1.1-1 is a violation (50-373/98011-01(DRP); 50-374/98011-01(DRP)). However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This LER is closed.

O8.10 (Closed) LER 50-373/97-038-00: Inadequate Calibration of Hydrogen Recombiner (HG) Instrumentation Due to a Misinterpretation of TS.

On October 20, 1997, during reviews to satisfy Generic Letter (GL) 96-01, "Testing of Safety System Logic Circuits," engineering department personnel identified that the operability of the trip/interlock functions were not verified during performance of LaSalle Instrument Surveillance (LIS)-HG-101(201), "Unit 1 Hydrogen Recombiner Temperature Indication Calibration," Revision 6, and LIS-HG-103(203), "Unit 1 Hydrogen Recombiner Inlet Pressure Indication Calibration," Revision 3. Engineers determined that the HG logic circuit contacts for several temperature and pressure instruments were not checked for proper operation following a simulated trip of the instrument channel. Technical Specification Surveillance Requirement 4.6.6.1.c required that a channel calibration be performed for all HG operating instrumentation and control circuits at least once every 18 months. Also, TS 1.4 required channel functional tests which must test all components up to the point where single-action signals were combined, including relays in the channel upstream of the point where single-action signals were combined.

The licensee determined the root cause of the event was inadequate engineering oversight leading to misinterpretation of the TS Surveillance requirement to perform channel functional testing. A review of safety-related contact testing performed by an independent source in 1995 had identified the omission of the channel functional tests for this system; however, engineering personnel misinterpreted the available information and failed to recognize the requirement. The licensee's corrective actions included completing necessary procedure changes for Unit 1, scheduling necessary Unit 2 procedure changes to be performed prior to startup for Unit 2, and completing a review of the 1995 contact testing adequacy documents for additional missed requirements. The licensee did not identify any additional TS discrepancies during the review.

The licensee's failure to perform channel functional tests as required by TS Surveillance Requirement 4.6.6.1.c and TS 1.4 is a violation (50-373/98011-02(DRP); 50-374/98011-02(DRP)). However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This LER is closed.

O8.11 (Closed) LER 50-373/97-041-00: Failure to Verify Thermal Limits Prior to Exceeding 25 percent Power During Unit Startups Prior to 1996 due to Misinterpretation of TS Requirements.

The licensee identified their failure to verify adequate thermal limit margins prior to

exceeding 25 percent rated thermal power during startup, as required by TS 4.2.1, 4.2.3, 4.2.4, and 4.0.4. The licensee identified that the root cause of the failure to verify the thermal limit margins prior to exceeding 25 percent power was a personnel error in interpreting the associated TS along with the provisions specified in TS 4.0.4, during startup of Unit 1 and Unit 2 prior to 1996. Technical Specification 4.0.4 required that entry into a specified operating condition [>25 percent] shall not be made unless the surveillance test requirements associated with the limiting condition for operation had been performed within the applicable surveillance test interval.

The licensee had completed corrective actions which included a verification that thermal limits were within TS limits prior to exceeding 25 percent power for six reactor startups occurring in 1996, and a revision to the normal unit startup procedure to clearly require the verification of thermal limits prior to exceeding 25 percent rated thermal power during startup. In addition, the licensee documented a briefing given to the nuclear engineers in which the subject LER and associated technical specification requirements were discussed.

The licensee's failure to verify thermal limits prior to exceeding 25 percent rated thermal power is a violation of TS 4.0.4 (50-373/98011-03(DRP); 50-374/98011-03(DRP)). However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This LER is closed.

O8.12 (Closed) LER 50-373/97-043-00: Incomplete TS Surveillance Test on Division III Emergency Diesel Generator Due to Inadequate Procedure Review.

On November 25, 1997, the licensee determined that plant surveillance testing procedures did not meet the requirements of TS 4.8.1.1.2.d.11.b. The inspectors reviewed the licensee's actions to address testing of the high pressure core spray (HPCS) EDG that was not performed in accordance with the TS. The inspectors findings were documented in NRC Inspection Report 50-373/374-97020, Section E1.1. The licensee's failure to perform the testing with the EDGs operating and failure to verify operation of the overcurrent relays was a violation of TS Surveillance 4.8.1.1.2.d.11.b (50-373/97020-03(DRP); 50-374/97020-03(DRP)) and was treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy.

The inspectors verified the implementation of the licensee's corrective actions specified in LER 50-373/97-043-00, which included declaring the 1B and 2B EDGs inoperable until the methodology was developed to adequately satisfy the TS requirements. In addition, the inspectors verified that the licensee revised surveillance test procedures to implement the Technical Specification requirements and performed a validation to verify that all EDG surveillance tests were in compliance with TS. Unit 1 actions were completed and adequate. Unit 2 actions were scheduled to be completed prior to Unit 2 restart. This LER is closed.

O8.13 (Closed) LER 50-373/98-002-00: Emergency Diesel Generators Not Declared Inoperable During Surveillance Testing Resulting in the Potential for Redundant Safety Systems to Be Unavailable Due to Inadequate Method for Establishing Configuration Control.

On May 10, 1998, during a review of test procedures for auxiliary equipment associated

with the EDGs, a licensed SRO identified that the EDGs were not being declared inoperable during surveillance testing which reduced EDG cooling water flow below design requirements. LaSalle Operations Surveillance (LOS)-DG-Q1(Q2,Q3), "0(1A/2A,1B/2B) Diesel Generator Auxiliaries Inservice Test," provided testing instructions for quarterly testing of various EDG support components including the cooling water pump. To verify pump flow characteristics at set flow conditions, the operators would align cooling flow to the EDG which reduced the flow below the design flow required in the Updated Final Safety Analysis Report (UFSAR). The EDG was not declared inoperable due to a long-standing practice of not declaring the EDGs inoperable while testing auxiliary equipment.

Due to the extended shutdown and time frame involved with the practice of not declaring EDGs inoperable during quarterly testing, the licensee was not able to determine if inappropriate past ECCS configurations existed from EDG inoperability. The licensee did conservatively consider that a violation of TS could have occurred during the conduct of a quarterly test and initiated the event report.

Procedural deficiencies in LOS-DG-Q1(Q2,Q3) resulted in the inappropriate determination of EDG operability. The licensee initiated corrective actions which included informing all shift managers of the need to declare the EDGs inoperable during quarterly testing and completed temporary procedure changes to the quarterly testing procedures which required the EDGs to be declared inoperable during the test. The licensee also reviewed all other operating surveillance test procedures for conditions which could result in equipment inoperability, implemented necessary procedure revisions to provide clarity where equipment must be declared inoperable, and installed additional flow instrumentation on the EDG cooling water system to allow flow measurements without lowering EDG cooling water flow below design requirements. The inspectors determined that appropriate changes were incorporated into LOS-DG-Q1(Q2,Q3) and that the remaining corrective action items had been completed or were appropriately scheduled.

The inadequate procedures resulting in the licensee's failure to ensure that the EDGs were declared inoperable during surveillance test activities is a violation of 10 CFR Part 50, Appendix B, Criterion V (50-373/98011-04(DRP); 50-374/98011-04(DRP)). However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This LER is closed.

O8.14 (Closed) LER 50-373/98-005-00: Post-LOCA [Loss of Cooling Accident] H2/O2 [Hydrogen and Oxygen] Monitoring System Design Inconsistent With UFSAR due to Indeterminate Root Cause.

On March 20, 1998, during a review of inservice testing requirements for containment monitoring valves, the licensee identified that the currently installed configuration of the primary containment penetrations for the Post-LOCA H2/O2 system was not as described in UFSAR, Table 6.2-21. For the Post-LOCA H2/O2 system to be an extension of the primary containment, the high radiation sample system (HRSS) sample valves associated with the Post-LOCA H2/O2 system were required to be considered containment isolation valves. General Design Criteria 56 of 10 CFR Part 50, Appendix A, required that each line that connects directly to the containment atmosphere and penetrates primary reactor containment be provided with containment isolation valves. While the HRSS valves were designed as American Society of Mechanical Engineers (ASME) Class 2 and Seismic Category I, the HRSS valves were not identified, tested, or controlled as primary containment isolation valves. The licensee was not able to determine why these systems were not appropriately identified and tested during initial design, licensing, and construction. The impact on nuclear safety was minimal as the valves were tested as part of a closed-loop system leak test performed on the Post-LOCA H2/O2 system at the peak containment accident pressure during each refueling outage. The licensee determined that leakage via this pathway would therefore be expected to remain within the design limits.

The licensee initiated corrective actions which included ensuring that the system met the licensing requirements, revising the UFSAR as appropriate, providing appropriate testing and control of the HRSS valves as containment isolation valves, and reviewing inservice testing requirements for the remaining containment isolation valves for adequacy. The inspectors verified that the corrective action items had been completed or were appropriately scheduled.

For the Post-LOCA H2/O2 system to be an extension of containment as described in the UFSAR (i.e., closed loop outside the containment), the HRSS sample valves were required to have been identified as containment isolation valves (at least one valve in the line) in design documents. Failure to ensure design requirements applicable to the HRSS valves were incorporated into the appropriate specifications and procedures is a violation of 10 CFR Part 50, Appendix B, Criterion III (50-373/98011-05(DRP); 50-374/98011-05(DRP)). However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This LER is closed.

O8.15 (Closed) LER 50-373/98-010-00: Incorrect Radiation Detectors Installed in a Safety Related System (PR/D18) and Subsequent Missed Surveillance Test, As the Result of Human Performance Error Due to Inattention to Detail.

On April 9, 1998, engineering personnel discovered that control room (CR) heating, ventilation, and air conditioning (HVAC) radiation detectors placed in operation in early 1994 were not in compliance with the TS, Table 3.3.7.1-1, which required a range of 0.1 to 10,000 mR/hr. The licensee replaced eight radiation monitoring detectors in an attempt to resolve problems with the detectors. While the replacement detectors were procured from the same manufacturer, a different detector model was used which changed the detector's operational range from 0.1-10,000 mR/hr to 0.01-1,000 mR/hr. Personnel performing the parts evaluation did not recognize the difference in critical characteristic ranges which resulted in the incorrect implementation of the change.

Following installation of the lower range detectors, the licensee missed several

opportunities to correct the inappropriate actions, including the failure to satisfy TS surveillance test acceptance criteria, performance of a safety evaluation on a related portion of the equipment, receipt of a vendor letter discussing the detector range, and receipt of an information transmittal generated to address a problem with the upper range of the installed detector. In each instance, engineering personnel did not recognize the detectors installed in 1994 did not satisfy the TS required range.

The licensee implemented corrective actions, including replacing the incorrect range detectors with detectors of the appropriate range, recalibrating the newly installed detectors, revising the appropriate instrument maintenance procedures to reflect the correct range detector, and providing training to plant personnel regarding both the initial replacement error and the operating characteristics of the newly installed detectors. The inspectors verified that the radiation detectors with the correct range had been installed and calibrated on Unit 1 and that the remaining corrective action items had been completed or were appropriately scheduled.

The licensee's failure to ensure the CR HVAC radiation detectors were maintained in accordance with plant design is a violation of 10 CFR Part 50, Appendix B, Criterion III (50-373/98011-06(DRP); 50-374/98011-06(DRP)). However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This LER is closed.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (62707)

The inspectors reviewed the licensee's maintenance indicators, event investigation documents, and maintenance activities. In addition, the inspectors discussed maintenance issues with licensee personnel.

b. Observations and Findings

The licensee’s indicators of maintenance performance had shown improvement particularly in the area of rework and schedule adherence. The amount of work that must be reperformed, as defined by the licensee's definition of rework, decreased from over four percent to approximately 2 percent over the past year. Maintenance department performance warranted improvement by the licensee in the area of rework and was addressed by maintenance personnel while LaSalle was shut down. In addition to the licensee's successful efforts at reducing the amount of rework, the licensee implemented their 12-week maintenance scheduling and work process. The amount of work that was performed for the first week where work was performed using the new planning process was approximately 85 percent of the work scheduled which was an improvement over historical performance in this area.

Although maintenance personnel had performed better in some areas, other personnel performance problems were identified by the licensee. In one instance, maintenance personnel informed the operations department that maintenance was complete on plant equipment when in fact, the work was not yet complete. Maintenance personnel were rebuilding an actuator on a non-safety-related service water strainer and disassembled the strainer. However, a supervisor did not verify that the work was not complete and notified operations personnel that the work was completed and the actuator could be returned to service. The supervisor did not review the work package nor did he perform a walkdown of the work activity, both of which were performance expectations for maintenance supervisors. The safety significance of the error was minimal because operations personnel never restored the service water strainer to service due to identifying that the work on the actuator was not yet complete.

c. Conclusions

The conduct of maintenance performance was acceptable and had improved in the areas of rework and the work scheduling process. The licensee identified a human performance error involving a supervisor who released an OOS on a non-safety-related service water strainer for which work had not yet been completed.

M1.2 Division I and Division II Emergency Core Cooling System (ECCS) Response Time Testing

a. Inspection Scope (61726)

Inspectors observed the preparation and conduct of the Division I and Division II ECCS response time tests. In addition, the inspectors reviewed supporting test documentation, specifically, LaSalle Technical Surveillance 500-109(110), “Integrated Division I (II) Response Time Surveillance,” Revision 9(6) and the test results.

b. Observations and Findings

Overall, the two tests observed by the inspectors were performed in accordance with approved plant procedures, conformed with plant TS and the UFSAR, and were satisfactorily completed. Some minor errors, such as inadequate three-way communications, were noted by the inspectors during the conduct of the test. However, in most instances, errors noted by the inspectors were also observed by plant supervision and were addressed by the licensee appropriately. In addition, two instances of control switches being out of the required position to support testing were found during the conduct of testing. Both were identified by plant personnel when the equipment did not respond as expected.

In the first case, a breaker which was supposed to be closed was in the pull-to-lock-following-close position and therefore failed to trip as expected during the test. Because the second portion of the integrated test also tested the same breaker, the breaker switch was repositioned and the proper response was verified during a subsequent portion of the test.

The second instance of a control switch being out of the required position to support the testing was discovered when the power supply for the Unit 2 Safety Parameter Display System (SPDS) failed to transfer to an alternate source when power was lost from its

original source. The licensee found that the power supply transfer switch was not in a position allowing auto transfer. This instance resulted in SPDS inoperable for Unit 2 for approximately 9 hours and required an emergency notification being made to the NRC due to a loss of assessment capability. Because Unit 2 was defueled, the safety significance of the loss of assessment capability was minimal.

In addition, the inspectors identified that, after instrument maintenance (IM) technicians installed the chart recorder used in the Division II test, the recorder's chart speed was not at the value established in the procedure, although the procedure was initialed as completed. The inspectors notified IM technicians who changed the chart speed to the value specified in the procedure. The inspectors were informed that other IM technicians had previously established the chart speed and that the subsequent procedural step which required calibration of the chart recorder did not require the IM technicians to verify that the chart speed was appropriate. The IM technicians initiated a PIF in accordance with the licensee's corrective actions program.

c. Conclusions

The Division I and Division II ECCS integrated RTTs were completed satisfactorily in accordance with plant procedures and in conformance with TS. Three instances of improper pre-test configuration of equipment were identified although none were safety-significant. The configuration issues were either corrected prior to completion of the test or had no impact on the test acceptance criteria.

M8 Miscellaneous Maintenance Issues (92700, 92902)

M8.1 (Closed) VIO 50-373/374-96009-I.A.1.: Failure to determine that lake screen house crack repairs were not "Minor Maintenance" and performing work without documented instructions or procedures.

The licensee implemented corrective actions, described in the licensee's response to the violations by letter dated February 24, 1997, which included implementing procedures for the work screening process and classifying work activities for the identified violation. In Nuclear Station Work Procedure (NSWP)-WM-08, "Action Request Screening Process," criteria for classifying and assigning work were specified. In addition, the station administrative procedure for processing action and work requests required a team, which consisted of personnel from the major departments, to review the action requests and an engineering review of structural work. Also, NSWP-WM-06, "Minor Maintenance Process," was implemented and provided guidance regarding work that could be performed at the station as minor maintenance. The screening process described in the station procedures was used to classify the work and ensure that safety-related work was properly reviewed, prepared, and performed using the station's work process. This process required work be performed using appropriate work instructions or procedures. This violation is closed.

M8.2 (Closed) VIO 50-373/374-96009-I.A.2.: Failure to identify, evaluate, and resolve issues surrounding the injection of foam sealant material into the service water tunnel.

As stated in a letter dated February 24, 1997, in response to the subject violation, the licensee's corrective action program was revised to improve both the identification and resolution of events and safety issues. Several procedures and processes were revised to address the management and engineering deficiencies that were identified and which led to the violations. Management and engineering involvement in reviewing plant problems identified by plant personnel on PIFs, was increased. Management involvement was increased by requiring each PIF to be reviewed by the ESC. The ESC included the station, maintenance, operations, and engineering managers as members. The inspectors observed ESC meetings where PIFs were reviewed by appropriate management personnel and verified management was attending the meetings. The ESC members were cognizant of almost every PIF that was addressed during the ESC meetings.

Since the plant was shut down in September 1996, engineers had received training on performing safety evaluations and operability assessments, and created an independent review group to review engineering work products, such as operability evaluations. This violation is closed.

M8.3 (Closed) VIO 50-373/374-96009-I.B.1: Work performed without adequate instructions.

The licensee's response to the Notice of Violation indicated that several procedures that were related to operation of the various essential and non-essential service water system strainers would be revised. In addition, the licensee implemented testing procedures where testing was previously performed without any instructions. Operations and maintenance procedures were revised as specified by the licensee's violation response and the procedure revisions were adequate to address the causes for the violation.

In one case, testing was performed by plant personnel without any procedure available. The licensee implemented administrative procedures as part of the LaSalle Restart Action Plan to require plant testing be performed by plant personnel using approved procedures. In addition, management expectations regarding procedure use and adherence were communicated to the entire plant staff. This violation is closed.

M8.4 (Closed) VIO 50-373/374-96009-II.A.: Failure to maintain records which identified the inspector and results of the work or action taken for identified deficiencies for work performed on service water strainers.

The licensee revised administrative and maintenance procedures to require documentation of the as-found and as-left conditions of equipment and any work that was performed on the equipment. In addition, the licensee provided training to plant personnel and pre-job briefings routinely emphasized the documentation requirements for work performed in accordance with the established maintenance procedures. This violation is closed.

M8.5 (Closed) LER 50-373/94-015-01: Unit 1 Primary Containment Isolation and Scram Due to Switch Failure.

On December 12, 1994, with Unit 1 in Operational Condition 1 at 92 percent power, a Group 1 main steam isolation valve primary containment isolation occurred due to a spurious main steam line high flow signal. The licensee determined that the reactor trip occurred due to a failed Static O-Ring switch, replaced the switch, verified operability of the other main steamline Static O-Ring switches, and returned the failed switch to the vendor

for failure analysis. Revision 0 of the LER was closed in NRC Inspection Report 50-373/05011 (DRP); 50-374/95011(DRP).

During a review of documents, the licensee discovered that a supplemental report discussed in Revision 0 had not been completed following identification of additional information regarding the switch failure. The manufacturer had identified that oil contamination had caused the switch failure. The licensee was not able to determine the source of the oil contamination since the switch was not used in oil-based system applications. The licensee performed additional testing of the Static O-Ring switches to ensure calibration repeatability. This resulted in one switch requiring replacement. The inspectors reviewed the work documents and discussed the calibrations with the instrument maintenance work analyst and had no concerns. This LER is closed.

M8.6 (Closed) LER 50-373/97-036-00: Missed TS Surveillance Tests and Inadequate Post Maintenance Testing of Motor-Operated Valve Thermal Overload Bypass Circuitry Due to Inadequate Procedures.

The licensee identified that procedures used to perform motor-operated valve (MOV) testing did not meet the channel functional testing requirements of TS 4.8.3.3.1.b. Specifically, post-maintenance testing of some MOVs was performed without properly testing the thermal overload bypass function required by the channel functional test. The licensee did not demonstrate the thermal overload function, which was bypassed under accident conditions or was normally bypassed (except when placed in service during maintenance or testing). Although the test procedures did not adequately test the thermal overload bypass function, the post-maintenance testing addressed the portion of the circuit that was affected by the maintenance.

The corrective actions implemented by the licensee included reviewing testing records to verify that appropriate TS testing was adequate and completed for all required MOVs prior to restart of Unit 1 and refueling of Unit 2, revising testing procedures to incorporate the correct test methods, and developing guidance describing when channel functional testing was required. In addition, personnel preparing test procedures were required to include the correct test methods in work packages prepared for MOV maintenance and testing.

The inspectors reviewed test procedures and the testing records for MOVs, both of which appeared adequate. However, the failure to perform the testing required by TS 4.8.3.3.1.b is a violation (50-373/98011-07(DRP); 50-374/98011-07(DRP)). However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This LER is closed.

M8.7 (Closed) LER 50-373/97-039-01: Unanalyzed Condition While Removing Main Steam Safety Valves Due to Inadequate Procedural Guidance.

On October 27, 1998, the licensee identified that main steam safety valves (SRVs) were removed with fuel in the reactor vessel which placed the plant in an unanalyzed condition. The plant was not analyzed for potential effects of unrestrained SRV discharge pipes which would become unrestrained when the SRVs were removed. The licensee analyzed the impact of unrestrained Unit 1 SRV discharge piping and the analysis indicated that although one of the pipes was not adequately restrained, there would have been no impact

on safety-related equipment. The procedure that was used at LaSalle to remove the SRVs did not require fuel to be removed from the reactor vessel prior to removing any SRVs.

The licensee implemented corrective actions which included the analysis of the unrestrained SRV discharge pipes and a review of other procedures to determine if similar circumstances existed while performing other maintenance activities. The licensee also revised the inadequate procedure. This allowed the removal of SRVs while fuel was in the reactor vessel. An analysis of the Unit 2 SRV discharge piping was planned and the results of the analysis would be reported in a Supplemental LER. This LER is closed.

M8.8 (Closed) LER 50-373/97-042-01: High Pressure Core Spray (HPCS) Safety Function Inoperable Due to Inadequate Circuit Breaker Lubrication.

On November 20, 1997, the licensee identified that electrical breakers for the HPCS system (Division III) were not maintained correctly and could have prevented the HPCS system from operating as required in the event of an accident. Specifically, the lack of lubrication combined with older grease on the lower link pin bushing of the breakers could prevent the breakers from closing. The maintenance requirements provided by the breaker manufacturer did not address periodic cleaning and lubrication of the lower link pin bushing. Although periodic maintenance of the breakers was being performed by the licensee, the lower link pin bushing was not addressed during the periodic maintenance.

No actual consequences resulted from the inadequate lubrication since the HPCS system did not fail to operate to mitigate the consequences of an accident. However, had either unit at LaSalle been operating when the HPCS system was required, the system could have failed to operate because of the inadequate lubrication.

The licensee overhauled all breakers for the Unit 1 HPCS system and revised plant maintenance procedures to incorporate the lubrication of the bushing. Other corrective actions included a review of the vendor information, a review of the Division I and II breaker maintenance procedures, an update of the vendor equipment manual, and training on the procedures. The breakers for Unit 2 will be overhauled prior to restart of Unit 2. The inadequate maintenance procedure used to maintain the HPCS system breaker is a violation of 10 CFR Part 50, Appendix B, Criterion V, (50-373/98011-08(DRP); 50-374/98011-08(DRP)). However, this non-repetitive, licensee identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy.

M8.9 (Closed) Inspection Followup Item (IFI) 50-373/97016-01: Review of HPCS breaker failure investigation.

The breaker failure investigation was completed by the licensee and the results documented in LER 50-373/97-042 and is discussed in Section M8.8 of this report. This item is closed.

M8.10 (Closed) Unresolved Item 50-373/97012-03: Evaluation of the Affect of the Polymer Coating on the 0 Emergency Diesel Generator (EDG) Heat Exchanger Flange Surface.

This item was considered an unresolved item pending the inspectors' review of the completed operability assessment of the epoxy coating on the 0 EDG heat exchanger

flange surface. The licensee removed the epoxy coating on the 0 EDG heat exchanger flange and performed a weld repair of the flange surfaces. The EDG heat exchanger had been returned to service and the 0 EDG had been operable. The licensee did not identify any similar coatings on the 1A or 1B EDG. The licensee determined that the use of the epoxy coating was in conformance with the applicable code requirements and had not impacted operability of the EDG. This item is closed.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Review of Ingersoll-Dresser Pump Potential Failure Mode

a. Inspection Scope (37551)

The inspectors reviewed the licensee's evaluation of a potential 10 CFR Part 21 concern regarding ECCS pumps at LaSalle. The inspectors reviewed Operability Evaluation (OE) 98-026, dated July 14, 1998, and discussed the issue with licensee personnel.

b. Observations and Findings

On July 9, 1998, the licensee was informed that the Ingersoll-Dresser Pump company published a 10 CFR Part 21 report describing a potential failure mode for Type APKD pumps with cast iron suction heads. The Part 21 report was written based on failures of similar pumps at another nuclear station. Specifically, some fitted parts below the pump suction heads on Type APKD pumps could dislodge and damage pump components.

LaSalle Station had ten pumps (five on Unit 1 and five on Unit 2) which were Type APKD or Type KD Ingersoll-Dresser pumps. All ECCS pumps, including HPCS, low pressure core spray (LPCS), and residual heat removal (RHR) pumps A, B, and C, were potentially impacted by the 10 CFR Part 21 report. However, the licensee completed the operability evaluation and determined that the pumps at LaSalle were designed differently and therefore, were not susceptible to the failure mode described the Part 21 report. The operability evaluation was also completed within the appropriate timeliness goals specified by the licensee's procedures and appeared appropriate to the inspectors. The documentation was clear, brief, and supported the operability conclusion.

c. Conclusions

The operability evaluation of the ECCS pumps performed by the licensee to address 10 CFR Part 21 report issued by Ingersoll-Dresser Pump Company was timely and was well written. The documentation clearly supported the operability conclusions reached in the evaluation.

E8 Miscellaneous Engineering Issues (92903)

E8.1 (Closed) VIO 50-373/374-96009-I.B.2.: Failure to perform safety evaluations.

During the service water foam sealant injection event, activities were identified where the licensee did not perform safety evaluations to determine if facility changes involved unreviewed safety questions. As immediate corrective actions, the licensee restored the plant to the correct design configuration in one case and performed a safety evaluation for a non-conforming condition, which resulted in a change to the UFSAR, in another case. Additional long-term corrective actions included a project to review of the UFSAR and the System Functional Performance Reviews. These reviews were conducted on approximately 41 systems on both Unit 1 and Unit 2. This item is closed.

E8.2 (Closed) LER 50-374/94-011-00: High Pressure Core Spray Inoperable Due to HPCS Diesel Generator Cooling Water Pump Trip Due to a Design Logic Deficiency.

Following shutdown of the 2B EDG, with the 2B EDG cooling water pump running, the pump's control switch was taken to the normal-after-start position as required by procedure. This action resulted in a trip of the cooling water pump. The licensee determined that when the control switch was taken from the normal-after-stop position, with the pump running and with no auto-start signal present, to the normal-after-start position, control power was momentarily removed, tripping the pump. The subsequent start signal applied during the same switch manipulation while the pump was coasting down, caused an overload trip because the motor was out of phase. The licensee determined the root cause of the pump trip to be the original design of the control circuitry which caused a momentary loss of control power during switch manipulation. The extent of the design deficiency was determined to be limited to the Unit 1 and Unit 2 Division III EDG cooling water pumps and HPCS area cooler fans and could only occur when an auto-start signal was not present. The licensee determined that eliminating the procedural requirement to place the affected components in the normal-after-start position following shutdown of the EDGs would avoid tripping the pump.

The inspectors verified that procedural changes had been completed for the EDG normal operating procedure and monthly surveillance test procedures. Other surveillance test procedure revisions were scheduled to be completed prior to restart. Furthermore, the inspectors interviewed operators and found that they were cognizant of the procedural changes and the basis for not placing the affected control switch in the normal-after-start if the respective pump was running. This LER is closed.

E8.3 (Closed) LER 50-373/98-003-00: Abnormal Startup of Idle Reactor Recirculation Loop Analysis Not Bounding Due to Inadequate Vendor Calculation.

While performing an analysis to support a reactor recirculation flow control valve position setpoint change, the valve's manufacturer discovered that the licensee's UFSAR analysis for abnormal startup of an idle reactor recirculation pump was not conservative. Preliminary results from a General Electric analysis regarding a revised flow control valve position for reactor recirculation pump speed increases indicated that the initial conditions assumed in the UFSAR analysis were not the most severe. Specifically, initiating the speed increase at a lower power level than was originally assumed in the analysis created a more severe transient with respect to the thermal operating limits. Because TS 3.4.1.4 Limiting Condition for Operation constraints for starting an idle reactor recirculation pump were more limiting than that assumed in the transient analysis, and the plant had not violated the TS in this regard, thermal limits and fuel cladding integrity had been maintained.

An updated transient analysis for abnormal startup of an idle recirculation loop had been completed by General Electric. The licensee had initiated corrective actions which used the updated transient analysis to establish the limiting parameters for single reactor recirculation loop operation and restoration of two loop operation. The inspectors verified that the licensee incorporated the bounding parameters into the appropriate Unit 1 operating procedures. Unit 2 procedures were scheduled to be revised prior to startup of Unit 2. The inspectors reviewed an approved UFSAR change incorporating the updated transient analysis and no deficiencies were noted. In addition, the licensee had scheduled a review of other UFSAR Chapter 15 transients for similar inconsistencies and was following the General Electric internal corrective action program resolution of this issue. This LER is closed.

E8.4 (Closed) Unresolved Item (URI) 50-373/374-98009-03 Corrective Actions for Potential Emergency Core Cooling System Suction Strainer Clogging Concern Scheduled For Completion After Plant Restart.

On June 25, 1997, the licensee identified that insulation on the reactor building closed cooling water system (RBCCW) and primary containment ventilation chilled water piping was missing metal flashing in several places in the containment. Engineering personnel were concerned that during loss of coolant accidents (LOCA), the insulation could deteriorate, migrate to the suppression pool, and challenge the ECCS suction strainers. In addition, the licensee identified that aluminum insulation installed during initial construction had a paper and polyethylene film vapor barrier which could also clog the ECCS suction strainers during an accident.

The licensee completed corrective actions which included the removal of all aluminum insulation on RBCCW piping in the containment and the replacement of the aluminum insulation on containment ventilation chilled water piping with stainless steel insulation. In addition, the licensee planned to review their responses to GL 85-22, "Potential for Loss of Post-LOCA Recirculation Capability Due to Insulation Debris Blockage," and Information Notice (IN) 88-28, "Potential for Loss of Post-LOCA Recirculation Capability Due to Insulation Debris Blockage," to ensure their adequacy. The licensee rescheduled the review to be completed prior to Unit 1 restart after the inspectors had identified that the review had been inadvertently scheduled for completion beyond the restart date.

On June 13, 1998, the licensee completed an evaluation of the documented responses for NRC GL 85-22 and IN 88-28. The licensee concluded that the documented responses were accurate, complete, and appropriate, and the non-conforming insulation material had no impact on the GL and IN responses because walkdowns had confirmed that the insulation was banded or clipped in place. The inspectors reviewed the evaluation and had no comments. This URI is closed.

IV. Plant Support

F8 Miscellaneous Fire Protection Issues (92904)

F8.1 (Closed) LER 50-373/98-011-00: Special Report Not Written as Required by TS When the Fire Protection System Was Inoperable During Surveillance Testing.

On April 10, 1998, the licensee identified that the practice of not declaring the diesel fire pumps (DFP) inoperable when their control switches had been placed in the off position was inconsistent with the definition of operability. Technical Specification LCO 3.7.5.1 required the fire suppression water system to be operable at all times. With both DFPs inoperable, TS LCO Action Statement 3.7.5.1.b. required that a special report be submitted to the NRC within 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status. The fire suppression system was periodically inoperable for short periods of time (minutes or hours vice shifts or days) while both DFP hand switches had been placed in the off position during surveillance testing from 1985 to 1998 without being declared inoperable and no special reports had been submitted. The reason the system had not been declared inoperable with both DFP hand switches in the off position was that the licensee had an administrative procedure which declared the condition a special case, provided that an operator had been assigned to manually start the DFPs if required. The licensee's corrective actions included issuing guidance to operators that stated that the practice of placing both DFP hand switches in off required declaring the system inoperable, and deleting the note in the administrative procedure which had allowed the DFPs to be considered operable when both hand switches were in off and an operator was assigned to start the pumps as required. In addition, the licensee had scheduled a review of other fire protection related procedures to determine if similar revisions are necessary.

The licensee's failure to implement the action statement for TS LCO 3.7.5.1.b. when both DFP hand switches had been placed in off is a violation (50-373/98011-09(DRP); 50-374/98011-09(DRP)). However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This LER is closed.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the results of these inspections to licensee management listed below at an exit meeting on July 16, 1998. The licensee acknowledged the findings presented. The inspectors asked the licensee if any materials examined during the inspection should be considered proprietary. The licensee identified none.

PARTIAL LIST OF PERSONS CONTACTED

ComEd

*F. Dacimo, Site Vice President
C. Berry, Assistant to the Site Vice President
*T. O'Connor, Plant Manager
*G. Campbell, Engineering Manager
*W. Riffer, Nuclear Oversight Manager
G. Heisterman, Maintenance Manager
D. Sanchez, Site Training Manager
D. Boone, Site Support Manager
*D. Farr, Operations Manager
*H. Pontious, Regulatory Assurance Manager
*P. Barnes, Restart Plan Manager
R. Palmieri, System Engineering Supervisor
*N. Hightower, Health Physics Supervisor
D. Bowman, Chemistry Supervisor
*R. Stachniak, Nuclear Oversite Assements Manager

* Present at exit meeting on July 16, 1998.

INSPECTION PROCEDURES USED

IP 37551	Onsite Engineering
IP 61726	Surveillance Observation
IP 62707	Maintenance Observation
IP 71707	Plant Operations
IP 92700	Onsite Follow-up or Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92901	Followup - Plant Operations
IP 92902	Followup - Maintenance
IP 92903	Followup - Engineering
IP 92904	Followup - Plant Support

ITEMS OPENED AND CLOSED

Opened

50-373/374-98011-01	NCV	Failure to perform the channel calibrations for the APRM flow-biased simulated thermal power-upscale circuit prior to Operational Condition 1 as required by TS Table 4.3.1.1-1.
50-373/374-98011-02	NCV	Failure to perform channel functional tests as required by TS Surveillance Requirement 4.6.6.1.c and TS 1.4.
50-373/374-98011-03	NCV	Failure to verify thermal limits prior to exceeding 25 percent rated thermal power.
50-373/374-98011-04	NCV	Inadequate procedures resulted in the licensee's failure to ensure that the EDGs were declared inoperable during surveillance activities.
50-373/374-98011-05	NCV	Failure to ensure design requirements applicable to the HRSS valves were incorporated into the appropriate specifications and procedures.
50-373/374-98011-06	NCV	Failure to ensure the CR HVAC radiation detectors were maintained in accordance with plant design.
50-373/374-98011-07	NCV	Failure to perform the motor-operated valve thermal overload bypass circuitry testing required by TS 4.8.3.3.1.b.
50-373/374-98011-08	NCV	Inadequate maintenance procedure used to maintain the HPCS system breaker.
50-373/374-98011-09	NCV	Failure to implement the action statement for TS LCO 3.7.5.1.b. when both DFP hand switches had been placed in off.

Closed

50-373/374-96009-I.A.1	VIO	Failure to determine that lake screen house crack repairs was not "Minor Maintenance" and performing work without documented instructions or procedures.
50-373/374-96009-I.A.2	VIO	Failure to identify, evaluate, and resolve issues surrounding the injection of foam sealant material into the service water tunnel.
50-373/374-96009-I.B.1	VIO	Work performed without adequate instructions.
50-373/374-96009-I.B.2	VIO	Failure to perform safety evaluations.
50-373/374-96009-II.A	VIO	Failure to maintain records which identified the inspector, results of the work, or action taken for identified deficiencies for work performed on service water strainers.
50-373/374-97007-02	VIO	Inadequate emergency diesel generator post-maintenance test guidance following air start motor replacement.
50-373/374-97020-01	VIO	Two examples of failure to follow plant procedures including the failure to maintain Operability Evaluations in the Control Room and the failure to incorporate required information in a maintenance work document.
50-373/374-97020-02	VIO	Corrective actions for loose emergency diesel generator test valve assemblies were not adequate to prevent repetition.
50-373/374-98011-01	NCV	Failure to perform the channel calibrations for the APRM flow-biased simulated thermal power-upscale circuit prior to Operational Condition 1 as required by TS Table 4.3.1.1-1.
50-373/374-98011-02	NCV	Failure to perform channel functional tests as required by Technical Specification Surveillance Requirement 4.6.6.1.c and TS 1.4.
50-373/374-98011-03	NCV	Failure to verify thermal limits prior to exceeding 25 percent rated thermal power.
50-373/374-98011-04	NCV	Inadequate procedures resulted in the licensee's failure to ensure that the EDGs were declared inoperable during surveillance activities.
50-373/374-98011-05	NCV	Failure to ensure design requirements applicable to the HRSS valves were incorporated into the appropriate specifications and procedures.

50-373/374-98011-06	NCV	Failure to ensure the CR HVAC radiation detectors were maintained in accordance with plant design.
50-373/374-98011-07	NCV	Failure to perform the motor-operated valve thermal overload bypass circuitry testing required by TS 4.8.3.3.1.b.
50-373/374-98011-08	NCV	Inadequate maintenance procedure used to maintain the HPCS system breaker.
50-373/374-98011-09	NCV	Failure to implement the action statement for TS LCO 3.7.5.1.b. when both DFP hand switches had been placed in off.
50-374/94-011-00	LER	High Pressure Core Spray Inoperable Due to HPCS Diesel Generator Cooling Water Pump Trip Due to a Design Logic Deficiency.
50-373/94-015-01	LER	Unit 1 Primary Containment Isolation and Scram Due to Switch Failure.
50-373/97-035-00	LER	Channel Calibration of the Average Power Range Monitor (APRM) Not Performed According to TS Requirements Due to Misinterpretation of a Table Notation.
50-373/97-036-00	LER	Missed TS Surveillances and Inadequate Post Maintenance Testing of Motor-Operated Valve Thermal Overload Bypass Circuitry Due to Inadequate Procedures.
50-373/97-038-00	LER	Inadequate Calibration of Hydrogen Recombiner (HG) Instrumentation Due to a Misinterpretation of TS.
50-373/97-039-01	LER	Analyzed Condition While Removing Main Steam Safety Valves Due to Inadequate Procedural Guidance.
50-373/97-041-00	LER	Failure to Verify Thermal Limits Prior to Exceeding 25 percent Power During Unit Startups Prior to 1996 due to Misinterpretation of Technical Specification Requirements.
50-373/97-042-01	LER	High Pressure Core Spray (HPCS) Safety Function Inoperable Due to Inadequate Circuit Breaker Lubrication.
50-373/97-043-00	LER	Incomplete TS Surveillance on Division III Emergency Diesel Generator Due to Inadequate Procedure Review.
50-373/98-002-00	LER	Emergency Diesel Generators Not Declared Inoperable During Surveillance Testing Resulting in the Potential for Redundant Safety Systems to be Unavailable Due to Inadequate Method for Establishing Configuration Control.

50-373/98-003-00	LER	Abnormal Startup of Idle Reactor Recirculation Loop Analysis Not Bounding Due to Inadequate Vendor Calculation.
50-373/98-005-00	LER	Post-LOCA [Loss of Cooling Accident] H2/O2 [Hydrogen and Oxygen] Monitoring System Design Inconsistent With UFSAR due to Indeterminate Root Cause.
50-373/98-010-00	LER	Incorrect Radiation Detectors Installed in a Safety-Related System (PR/D18) and Subsequent Missed Surveillances as the Result of Human Performance Error Due to Inattention to Detail.
50-373/98-011-00	LER	Special Report Not Written as Required by TS When the Fire Protection System Was Inoperable During Surveillance Testing.
50-373/97016-01	IFI	Review of HPCS breaker failure investigation.
50-373/97012-03	URI	Evaluation of the Affect of the Polymer Coating on the 0 Emergency Diesel Generator (EDG) Heat Exchanger Flange Surface.
50-373/374-98009-03	URI	Corrective Actions for Potential Emergency Core Cooling System Suction Strainer Clogging Concern Scheduled For Completion After Plant Restart.

LIST OF ACRONYMS USED

APRM	Average Power Range Monitor
CR	Control Room
DFP	Diesel Fire Pumps
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ESC	Event Screening Committee
GL	Generic Letter
HG	Hydrogen Recombiner
HLA	Heightened-Level-of-Awareness
HPCS	High Pressure Core Spray
HRSS	High Radiation Sample System
HVAC	Heating, Ventilation and Air Conditioning
IDNS	Illinois Department of Nuclear Safety
IM	Instrument Maintenance
IN	Information Notice
IOPR	Integrated Operations Performance Review
IR	Inspection Report
LAP	LaSalle Administrative Procedure
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LIS	LaSalle Instrument Surveillance
LOCA	Loss-Of-Cooling Accident
LOP	LaSalle Operating Procedure
LOS	LaSalle Operating Surveillance
LPCS	Low Pressure Core Spray
MCR	Main Control Room
MOV	Motor-Operated Valve
MSL	Main Steam Line
NON	Nuclear Operations Notice
NSWP	Nuclear Station Work Procedure
NRC	Nuclear Regulatory Commission
OE	Operability Evaluation
OOS	Out Of Service
OWA	Operator Work Arounds
PDR	Public Document Room
PIF	Problem Identification Form
RBCCW	Reactor Building Closed Cooling Water System
RHR	Residual Heat Removal
RTT	Response Time Testing
SAT	System Auxiliary Transformer
SPDS	Safety Parameter Display System
SRO	Senior Reactor Operator
SRV	Safety Related Valves
TS	Technical Specifications
TALT	Temporary Alterations

UFSAR	Update Final Safety Analysis Report
VIO	Violation
WCC	Work Control Center